

End to End ML Project

BA810: Supervised Machine Learning
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Recap

- Bootstrap
 - A technique to measure uncertainty
 - Randomly sample equal sized data with replacement
 - Repeat estimation and accuracy measurement
- Vs Cros Validation
 - Goal is to measure generalization error
 - Tested on every data point

- Hyper-parameter search
 - Grid: explore all combinations of fixed hyper-parameter values
 - Random: Evaluate combination of one random draw for each hyperparameter; repeat pre-defined number of times
 - Halving Grid/Random: evaluate hyper-parameter values identified as before, but all only cheaply; promising ones more precisely

Reminder

- Complete mid-course team feedback at <https://teamlearning.bu.edu/> by Thu (11/16) noon

Today (Mostly Labs)

- Randomized search
- Efficient randomized search by Halving strategy
- End to end ML
 - Median house price prediction
 1. Exploratory data analysis
 2. Identifying preprocessing needed
 3. Evaluating and selecting a model
 4. Finetuning
 5. Estimating generalization error before deploying
 6. Saving, loading, and applying the learnt model (for deploying)

